

CLAIMS

I claim:

1. An interactive medication cassette for use with a medication dispensing machine that dispenses medication, the dispensing machine having an associated computer processor and a sensing mechanism for obtaining and transmitting information to and from the associated computer processor, said interactive medication cassette comprising:
 - a housing adapted to hold an actual quantity of the medication, said housing being adapted to allow removal of the medication, and said housing being removably secured to the dispensing machine;
 - a machine readable and writable information strip affixed to said cassette, said information strip containing actual quantity information corresponding to said actual quantity of the medication held by said cassette, and said information strip being in communication with the sensing mechanism to transmit said actual quantity information to the associated computer processor; and,
 - wherein the dispensing machine alters said actual quantity of the medication in said cassette when dispensing an amount of the medication, and the computer processor^{*} alters said information strip to indicate that said actual quantity of the medication in said cassette was altered.
2. The interactive medication cassette of Claim 1, and wherein the dispensing machine is adapted to dispense the medication from said cassette, and the computer processor alters said information strip to indicate that said actual quantity of the medication in said cassette has been decreased.

3. The interactive medication cassette of Claim 1, and wherein the dispensing machine is adapted to dispense the medication to said cassette, and the computer processor alters said information strip to indicate that said actual quantity of the medication in said cassette has been increased.

4. The interactive medication cassette of Claim 2, and wherein the medication held by said cassette is a particular type of medication and said information strip contains medication type information, and wherein the dispensing machine includes an associated memory device containing prescription information, said prescription information including patient information identifying a specific patient and corresponding prescribed medication type information for that specific patient, and the computer processor is adapted to compare said medication type information of said information strip to said prescribed medication type information prior to dispensing medication to verify that said medication type information matches said prescribed medication type information.

5. The interactive medication cassette of Claim 4, and wherein the computer processor alters said information strip to include said patient information identifying a patient for whom the medication was dispensed.

6. The interactive medication cassette of Claim 5, and wherein the computer processor alters said information strip to include physician information identifying a physician that prescribed the medication.

7. The interactive medication cassette of Claim 1, and wherein the dispensing machine includes a data entry mechanism in communication with the associated computer processor, and wherein a healthcare worker dispensing medication from the dispensing machine enters healthcare worker information identifying that healthcare worker via said data entry mechanism, and wherein the computer processor alters said information strip to include said healthcare worker information.

8. The interactive medication cassette of Claim 3, and wherein the medication is dispensed to said cassette from a bulk medication container, said bulk medication container having a machine readable label containing bulk medication information, and the computer processor alters said information strip of said cassette to include said bulk medication information.

9. The interactive medication cassette of Claim 8, and wherein said bulk medication information includes medication type information.

10. The interactive medication cassette of Claim 9, and wherein said bulk medication information includes pharmaceutical manufacturer information.

11. The interactive medication cassette of Claim 8, and wherein a singulator is used to separate one dose of the medication from other doses of the medication when dispensing the medication from said bulk container.

12. The interactive medication cassette of Claim 8, and wherein said bulk medication container contains an actual bulk quantity of the medication, said machine readable label includes a machine readable and writable information strip, and said medication information in said information strip of said bulk container includes actual bulk quantity information corresponding to said actual bulk quantity of the medication, and wherein the computer processor alters said information strip of said bulk container to indicate that said actual bulk quantity of the medication has been reduced when the medication is dispensed from said bulk medication container.

13. The interactive medication cassette of Claim 1, and wherein the dispensing machine has a plurality of said medication cassettes, each of said cassettes having its own separate information strip, and each of said cassettes holding a quantity of a particular type of the medication, each of said separate information strips having separate actual quantity information and medication type information corresponding to the medication in its said cassette, said sensing mechanism transmitting said separate actual quantity information and medication type information to the computer processor, the computer processor using said separate actual quantity information and medication type information to develop inventory information, said inventory information including a total actual quantity for each particular type of the medication in the dispensing machine.

14. The interactive medication cassette of Claim 13, and wherein there are a plurality of dispensing machines, each of the dispensing machines transmitting its said inventory information to a data base for compiling total inventory information said total inventory information

including a grand total actual quantity information for each particular type of the medication in said plurality of dispensing machines.

15. The interactive medication cassette of Claim 1, and wherein said cassette has an interior adapted to hold said actual quantity of the medication in the cassette, and said cassette has a locking mechanism for preventing access to said medication in said interior of said cassette.

16. The interactive medication cassette of Claim 15, and wherein the dispensing machine has a compartment for receiving said cassette and a door for locking said cassette in said compartment.

17. The interactive medication cassette of Claim 1, and wherein said cassette has an interior and partitions dividing said interior into a plurality of individual cells, each of said individual cells being adapted to hold one dose of the medication, said cassette being adapted to allow separate removal of said doses of medication from said cassette.

18. The interactive medication cassette of Claim 17, and wherein said housing has an interior compartment, and said partitions and individual cells are formed by a rotating wheel, said rotating wheel being located in said interior compartment, said rotating wheel allowing said opening to separately align with each of said cells, and said opening of said housing being sized to allow removal of said one dose of the medication from its said individual cell.

19. The interactive medication cassette of Claim 17, and wherein said partitions and individual cells are formed by a blister pack.

20. The interactive medication cassette of Claim 1, and wherein the dispensing machine is automated and the computer processor controls said dispensing of the medication by the dispensing machine.

21. An interactive medication dispensing machine for dispensing medication and transmitting information comprising:

a dispensing machine having an associated computer processor and a sensing mechanism for obtaining and transmitting information to and from said associated computer processor;

a cassette having a housing adapted to hold an actual quantity of the medication, said housing being adapted to allow removal of the medication, and said housing being removably secured to said dispensing machine;

a machine readable and writable information strip affixed to said cassette, said information strip containing actual quantity information corresponding to said quantity of the medication held by said cassette, and said information strip being in communication with said sensing mechanism to transmit said actual quantity information to said associated computer processor; and,

wherein said dispensing machine is adapted to alter said actual quantity of the medication in said cassette when it dispenses an amount of the doses of medication, and said computer processor alters said information strip to indicate that said actual quantity of the medication in said cassette has been altered.

22. The interactive medication dispensing machine of Claim 21, and wherein said dispensing machine is adapted to dispense the medication from said cassette, and said computer processor alters said information strip to indicate that said actual quantity of the medication in said cassette has been decreased.

23. The interactive medication dispensing machine of Claim 21, and wherein said dispensing machine is adapted to dispense the medication to said cassette, and said computer processor alters said information strip to indicate that said actual quantity of the medication in said cassette has been increased.

24. The interactive medication dispensing machine of Claim 22, and wherein the medication held by said cassette is a particular type of medication, and said information strip contains medication type information, and wherein said dispensing machine includes an associated memory device containing prescription information, said prescription information including patient information identifying a specific patient and corresponding prescribed medication type information for that specific patient, and said computer processor is adapted to compare said medication type information of said information strip to said prescribed medication type information prior to dispensing medication to verify that said medication type information matches said prescribed medication type information.

25. The interactive medication dispensing machine of Claim 24, and wherein said computer processor alters said information strip to include said patient information identifying a patient for whom the medication was dispensed.

26. The interactive medication dispensing machine of Claim 25, and wherein said computer processor alters said information strip to include physician information identifying a physician that prescribed the medication.

27. The interactive medication dispensing machine of Claim 21, and wherein said dispensing machine includes a data entry mechanism in communication with said associated computer processor, and wherein a healthcare worker dispensing medication from said dispensing machine enters healthcare worker information identifying that healthcare worker via said data entry mechanism, and wherein said computer processor alters said information strip to include said healthcare worker information.

28. The interactive medication dispensing machine of Claim 23, and wherein the medication is dispensed to said cassette from a bulk medication container, said bulk medication container having a machine readable label containing bulk medication information, and said computer processor alters said information strip of said cassette to include said bulk medication information.

29. The interactive medication dispensing machine of Claim 28, and wherein said bulk medication information includes medication type information.

30. The interactive medication dispensing machine of Claim 29, and wherein said bulk medication information includes pharmaceutical manufacturer information.
31. The interactive medication dispensing machine of Claim 28, and wherein a singulator is used to separate one dose of the medication from other doses of the medication when dispensing the medication from said bulk container.
32. The interactive medication dispensing machine of Claim 28, and wherein said bulk medication container contains an actual bulk quantity of the medication, said machine readable label includes a machine readable and writable information strip, and said medication information in said information strip of said bulk container includes actual bulk quantity information corresponding to said actual bulk quantity of the medication, and wherein said computer processor alters said information strip to indicate that said actual bulk quantity of the medication has been reduced when the medication is dispensed from said bulk medication container.
33. The interactive medication dispensing machine of Claim 21, and wherein said dispensing machine has a plurality of medication cassettes, each of said cassettes having its own separate information strip, and each of said cassettes holding a quantity of a particular type of the medication, each of said separate information strips having separate actual quantity information and medication type information corresponding to the medication in its said cassette, said sensing mechanism transmitting said separate actual quantity information and medication type

information to said computer processor, said computer processor using said separate actual quantity information and medication type information to develop inventory information, said inventory information including total actual quantity information for each particular type of medication in said dispensing machine.

34. The interactive medication dispensing machine of Claim 33, and wherein there are a plurality of said dispensing machines, each of said dispensing machines transmitting its inventory information to a data base for compiling total inventory information said total inventory information including grand total actual quantity information for each particular type of the medication in said plurality of dispensing machines.

35. The interactive medication dispensing machine of Claim 21, and wherein said cassette has an interior adapted to hold said actual quantity of the medication in the cassette, and said cassette has a locking mechanism for preventing access to said medication in said cassette.

36. The interactive medication dispensing machine of Claim 35, and wherein said dispensing machine has a compartment for receiving said cassette and a door for locking said cassette in said compartment.

37. The interactive medication cassette of Claim 21, and wherein said cassette has an interior and partitions dividing said interior into a plurality of individual cells, each of said individual cells being adapted to hold one dose of the medication, said cassette being adapted to allow separate removal of said doses of medication from said cassette.

38. The interactive medication cassette of Claim 37, and wherein said housing has an interior compartment, and said partitions and individual cells are formed by a rotating wheel, said rotating wheel being located in said interior compartment, said rotating wheel allowing said opening to separately align with each of said cells, and said opening of said housing being sized to allow removal of said one dose of the medication from its said individual cell.

39. The interactive medication cassette of Claim 37, and wherein said partitions and individual cells are formed by a blister pack.

40. The interactive medication dispensing machine of Claim 21, and wherein said dispensing machine is automated and said computer processor controls said dispensing of the medication from said dispensing machine.

41. A process for distributing medication and related information comprising the steps of:
providing a dispensing machine having an associated computer processor and a sensing mechanism for obtaining and transmitting information to and from said computer processor, said computer processor controlling said dispensing of medication by said dispensing machine;
providing a medication cassette containing an actual quantity of the medication, said cassette having a machine readable and writable information strip containing actual quantity information corresponding to said actual quantity of the medication in said cassette;
joining said cassette with said dispensing machine and aligning said information strip with said sensing mechanism to communicate information to and from said computer processor;

dispensing a specified quantity of the medication from said dispensing machine to alter said actual quantity of the medication in said cassette; and,

altering said actual quantity information in said information strip to indicate that said actual quantity of the medication has been altered by said specified quantity of medication.

42. The process for distributing medication and related information of Claim 41, and wherein said specified quantity of the medication is dispensed from said cassette, and said computer processor alters said information strip to indicate that said actual quantity of the medication in said cassette has been decreased.

43. The process for distributing medication and related information of Claim 41, and wherein said specified quantity of the medication is dispensed to said cassette, and said computer processor alters said information strip to indicate that said actual quantity of the medication in said cassette has been increased.

44. The process for distributing medication and related information of Claim 42, and wherein the medication held by said cassette is a particular type of medication, said information strip containing medication type information corresponding to said particular type of medication, and said dispensing machine including an associated memory device containing prescription information, said prescription information including patient information and prescribed medication type information corresponding to said patient information, said dispensing machine further including a data entry device for communicating information to said computer processor, and prior to said dispensing, further comprising the steps of:

selecting said patient information via said data entry device;

obtaining said corresponding prescribed medication type information for said selected patient information; and,

verifying that said prescribed medication type information matches said particular medication type information.

45. The process for distributing medication and related information of Claim 44, and further comprising the step of altering said information strip to include said selected patient information.

46. The process for distributing medication and related information of Claim 44, and wherein said prescription information includes prescribing physician information, and further comprising the step of altering said information strip to include said prescribing physician information.

47. The process for distributing medication and related information of Claim 44, and prior to said dispensing, further comprising the steps of:

entering healthcare worker information that identifies a healthcare worker; and

altering said information strip to include said healthcare worker information.

48. The process for distributing medication and related information of Claim 42, and wherein said dispensing machine includes a plurality of cassettes, each of said cassettes holding an actual quantity of a particular type of medication, and each of said cassettes having a separate information strip containing actual quantity information and particular medication type

information corresponding to said actual quantity of said particular type of medication in its said cassette, and further comprising the steps of:

communicating said actual quantity information and particular medication type information to said computer processor; and,

using said actual quantity information and particular medication type information to compile inventory information, said inventory information including total quantity information corresponding to a total amount of medication for each type of medication in said dispensing machine.

49. The process for distributing medication and related information of Claim 42, and further comprising the steps of:

removing said cassette from said dispensing machine;

transporting said cassette to a second dispensing machine having a second associated computer processor and a second sensing mechanism for obtaining and transmitting information to and from said second computer processor, said second computer processor controlling said dispensing of medication from said second dispensing machine;

joining said cassette with said second dispensing machine, and aligning said information strip with said second sensing mechanism to communicate information to and from said second computer processor;

dispensing a second specified quantity of medication from said second dispensing machine to said cassette;

altering said quantity information to indicate that said quantity of the medication in said cassette has been increased by said second specified quantity of medication;

transporting said cassette back to said dispensing machine; and,

rejoining said cassette with said dispensing machine, and realigning said information strip with said sensing mechanism to communicate information to and from said computer processor.

50. The process for distributing medication and related information of Claim 42, and further comprising the steps of:

removing said cassette from said dispensing machine;

transporting said cassette to a second dispensing machine having a second associated computer processor and a second sensing mechanism for obtaining and transmitting information to and from said second memory device, said second computer processor controlling said dispensing of medication from said second dispensing machine;

joining said cassette with said second dispensing machine, and aligning said information strip with said second sensing mechanism to communicate information to and from said second computer processor;

dispensing a second specified quantity of the medication from said cassette; and

altering said actual quantity information in said information strip to indicate that said actual quantity of the medication has been decreased by said second specified quantity of medication.

51. The process for distributing medication and related information of Claim 43, and further comprising the steps of:

removing said cassette from said dispensing machine;

transporting said cassette to a second dispensing machine having a second associated computer processor and a second associated memory device for maintaining medication information, and a second sensing mechanism for obtaining and transmitting information to and from said second memory device, said second computer processor being adapted to control said dispensing of medication from said second dispensing machine;

joining said cassette with said second dispensing machine, and aligning said information strip with said second sensing mechanism to communicate information to and from said second computer processor;

dispensing a second specified quantity of medication from said cassette;

altering said actual quantity information in said information strip to indicate that said actual quantity of medication has been decreased by said second specified quantity of medication.

52. The process for distributing medication and related information of Claim 41, and further comprising the steps of providing an additional dispensing machine, removing said cassette from said dispensing machine, transporting said cassette to and placing said cassette in said additional dispensing machine, and aligning said information strip into communication with said computer processor of said additional dispensing machine.

53. The process for distributing medication and related information of Claim 41, and further comprising the step of:

transferring said quantity information to said computer processor in said dispensing machine;

comparing said quantity information to specified refill level information; and,
indicating when said actual quantity information reaches said specified refill level
information.

54. The process for distributing medication and related information of Claim 41, and wherein
said information strip contains manufacturer lot information, and further comprising the steps of:
transmitting said manufacturer lot information to said computer processor;
transmitting manufacturer recall information to said computer processor;
comparing said manufacturer lot information with manufacturer recall information; and,
indicating when a match between manufacturer lot information and manufacturer recall
information occurs.

55. The process for distributing medication and related information of Claim 41, and wherein
said computer processor has a clock for determining a time when a said specified quantity of
medication is dispensed from said cassette, and further comprising the step of altering said
information strip to indicate said time when said specified quantity of medication was dispensed.

56. The process for distributing medication and related information of Claim 41, and further
comprising the steps of:
providing a bulk container holding a large quantity of medication and having a machine
readable memory strip containing bulk container information pertaining to said medication in
said bulk container;

communicating said bulk container information to said information strip of said cassette;
and,
altering said information strip to include said bulk container information.

57. The process for distributing medication and related information of Claim 42, and further comprising the steps of:

providing a portable container having a memory device;
directing said dispensed specified quantity of the medication to said portable container;
and,
transferring said information in said information strip of said cassette to said memory device of said portable container.

58. The process for distributing medication and related information of Claim 50, and further comprising the steps of:

locking said cassettes closed during transport to prevent unauthorized access to said medication;
placing said cassette in said second dispensing machine and locking said second dispensing machine closed; and,
unlocking said cassette when in said locked second dispensing machine.

59. The process for distributing medication and related information of Claim 43, and wherein said cassette contains different types of medication, said cassette has an internal chamber divided

into a number of cells, and said information strip contains information regarding which kind of medication is located in which cell.

60. A medication distribution and information system for distributing a specific medication and coupling corresponding medication information to the specific medication during distribution, said medication distribution and information system comprising the steps of:

providing a dispensing machine having an associated computer processor and a sensing mechanism for obtaining and transmitting information to and from said computer processor, said computer processor controlling said dispensing of medication by said dispensing machine;

providing first a first container holding the specific medication and having a machine readable electronic label containing the corresponding medication information;

providing a second container having a machine readable and writable information strip;

joining said first and second containers with said dispensing machine, and aligning said sensing mechanism with said electronic label and said information strip;

dispensing said specific medication from said first container to said second container, transferring said specific medication information from said electronic label to said information strip and altering said information strip to include said specific medication information;

removing said second container from said dispensing machine for distribution, said second container containing said specific medication and said information strip containing said specific medication information.

61. The medication distribution and information system of claim 60, and wherein said medication information includes medication type information to facilitate identifying said type of medication in said second container.

62. The medication distribution and information system of claim 60, and wherein said medication information includes pharmaceutical manufacturer name and batch identification information to facilitate said recall of said specific medication in said second container.

63. The medication distribution and information system of claim 60, and further comprising the steps of:

providing a second dispensing machine having a second computer processor and a second sensing mechanism for obtaining and transmitting information to and from said second computer processor, said second computer processor controlling dispensing of medication by said second dispensing machine;

providing a third container having a second machine readable and writable information strip, and said second dispensing machine being adapted to dispense said specific medication from said second container to said third container;

joining said second and third containers with said second dispensing machine, and aligning said information strip and said second information strip with said sensing mechanism;

dispensing said specific medication from said second container to said third container, and transferring said specific medication information from said information strip of said second container to said information strip of said third container;

altering said information strip of said third container to include said specific medication information; and,

removing said third container from said second dispensing machine for further distribution, said third container containing said specific medication and said information strip of said third container containing said specific medication information.

64. The medication distribution and information system of claim 63, and wherein said dispensing machine dispenses a specific quantity of said specific medication to said second container, said dispensing machine altering said information strip to include said medication quantity information, said second dispensing machine receiving said medication quantity information from said second container to facilitate maintaining an inventory of said specified medication in said second dispensing machine.

65. The medication distribution and information system of claim 64, and wherein said dispensing machine is a pharmacy dispensing machine and said second dispensing machine is a hospital floor dispensing machine.

66. A medication distribution and inventory system comprising the steps of:

- providing first and second containers, said first container holding a specific quantity of medication and having a machine readable electronic label containing medication information corresponding to the medication and including specific quantity information, said second container having a machine readable and writable information strip;
- providing first and second dispensing machines, said first dispensing machine being adapted to dispense the medication from said first container to said second container and transmit said medication information from said electronic label to said information strip, and said first and second dispensing machines being in communication with a common data base;
- joining said first and second containers with said first dispensing machine;
- dispensing a desired quantity of the medication from said first container to said second container;
- altering said information strip to include said medication information including desired quantity information corresponding to said desired quantity of the medication;
- transmitting said desired quantity information to said data base, and updating said data base to indicate a reduction of the medication in said first container and an increase of the medication in said second container by said desired quantity of the medication;
- removing said second container from said first dispensing machine and transporting it to said second dispensing machine;
- joining said second container with said second dispensing machine; and,
- updating said data base to indicate an increase of the medication in said second dispensing machine by said desired quantity of medication; and,

using said data base to maintain an inventory of said medication in said first and second containers and second dispensing machine.